



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 325,026	06 03 1999	YAN ROZENON	AMAT 2922 ET	2304

7590 05 07 2002

PATENT COUNSEL
APPLIED MATERIALS INC
P O BOX 450-A
SANTA CLARA, CA 95052

EXAMINER

ALEJANDRO MULERO, LUZ L

ART UNIT	PAPER NUMBER
----------	--------------

1763

DATE MAILED: 05/07/2002

17

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/325,026

Applicant(s)

ROENZON ET AL.

Examiner

Luz L. Alejandro

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-15,29-34,41-51 and 71-80 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-15,29-34,41-51 and 71-80 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 16 October 2001 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 13.

- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 1763

DETAILED ACTION

Upon consideration of applicants' arguments, the restriction mailed on 12/31/01 has been withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 29-34, 41-44, 46-51, 71, and 79 are rejected under 35 U.S.C. 102(b) as being anticipated by Degner et al., U.S. Patent 5,074,456.

Degner et al. shows the invention as claimed including a processing chamber 50, comprising: a chamber body having a substrate support member 58 (first electrode) disposed therein; a chamber cover, comprising: a retaining ring 14 and a lid, wherein the lid comprises a second electrode 10 opposed to the first electrode, and comprising a first plate 64 and a second plate 80 connected together and defining a fluid channel 84 therebetween; a fluid inlet and outlet fluidly connected to the fluid channel; and a power source connected to the second electrode (see figures 3 and 4 and their descriptions). Furthermore, the reference in col. 3-line 51 to col. 5-line 17 further disclose the claimed materials of claims 31-32, 34 and 47-51.

Art Unit: 1763

With respect to claim 79, note that Degner et al. shows baffle plates 87 and 88 disposed between the backing plate and the second electrode (see Fig. 4 and col. 8, lines 32-35).

Claims 1, 4-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Lei et al., U.S. Patent 5,968,276.

Lei et al. shows the invention as claimed including a processing chamber comprising a chamber cover which comprises a retaining ring and a lid; wherein the lid comprises a first plate 86 and a second plate 84 connected together and defining a fluid channel 68 therebetween; a fluid inlet and outlet fluidly connected to the fluid channel; and feedthroughs 20 having the claimed characteristics. It is inherent to one having ordinary skill in the art that the processing chamber will further comprise a chamber body and a substrate support member disposed therein.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

Art Unit: 1763

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 4-15, 45, 72-78, and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Degner et al., U.S. Patent 5,074,456 in view of Lei et al., U.S. Patent 5,968,276.

Degner et al. is applied as above but lacks anticipation of showing the claimed feedthrough. Lei et al. disclosed an apparatus which comprises a similar chamber cover that Degner et al., and comprising a feedthrough 20 having the claimed characteristics (see figures 1-3 and 10, and their descriptions). In view of this disclosure it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus disclosed by Degner et al. as to further comprise the claimed feedthrough because such arrangement provides for increase coolant liquid flow and allows maintenance or disassembly of the feedthrough without breaking the seal on the coolant liquid system as disclosed by Lei et al. in the abstract.

Degner et al. and Lei et al. do not expressly disclosed that the first and the second plates each comprise a portion of the fluid channel, and that the passageway surface area comprises at least about 35% of the surface area of the lid. In view of the lack of unexpected results, and significant evidence to support that the choice of a fluid

channel being made by both of the plates comprising a portion of the channel would significantly affect the overall performance of the plasma processing apparatus, it would have been an obvious choice of design to one having ordinary skill in the art at the time the invention was made to modify the apparatus disclosed by the Degner et al. and Lei et al. references, as to made the first and second plates to comprise a portion of the fluid channel. With respect to the claimed passageway surface area of the lid, such limitation is considered to involve routine optimization while has been held to be within the level of ordinary skill in the art. Therefore, one of ordinary skilled in the art at the time the invention was made would have modified the apparatus disclosed by the Degner et al. and Lei et al. references by having a passageway surface area at least 35% of the surface area of the lid in order to optimize the apparatus.

With respect to claims 76-77, note that Degner et al. shows that the surface of the plate 80 has been texture (see the peak and valleys defining cooling channel 84 in fig. 4). Also, in view of the lack of unexpected results, and significant evidence to support that the choice of a plate assembly comprising one piece, wherein the cooling channels are formed laterally therethrough, would significantly affect the overall performance of the plasma processing apparatus, it would have been an obvious choice of design to one having ordinary skill in the art at the time the invention was made to modify the apparatus disclosed by the Degner et al. and Lei et al. references, as to comprise such one piece plate assembly in order to reduce or eliminate problems, such as bowing or cracking of the plates, that may occur in a two piece plate assembly.

Art Unit: 1763

Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lei et al., U.S. Patent 5,968,276.

Lei et al. is applied as above but lacks anticipation of showing that the first and the second plates each comprise a portion of the fluid channel, and that the passageway surface area comprises at least about 35% of the surface area of the lid. In view of the lack of unexpected results and significant evidence to support that the choice of a fluid channel being made by both of the plates comprising a portion of the channel would significantly affect the overall performance of the plasma processing apparatus, it would have been an obvious choice of design to one having ordinary skill in the art at the time the invention was made to modify the apparatus disclosed by the Lei et al. reference, as to made the first and second plates to comprise a portion of the fluid channel. With respect to the claimed passageway surface area of the lid, such limitation is considered to involve routine optimization while has been held to be within the level of ordinary skill in the art. Therefore, one of ordinary skilled in the art at the time the invention was made would have modified the apparatus disclosed by the Lei et al. reference by having a passageway surface area at least 35% of the surface area of the lid in order to optimize the apparatus.

Response to Arguments

Applicant's arguments, filed 10/16/01, with respect to the amended independent claim 1 not being anticipated by the Degner et al. reference is persuasive, and therefore the 35 U.S.C. 102 rejection over independent claim 1 has been withdrawn.

Art Unit: 1763

Applicant's arguments filed 10/16/01 have been fully considered but they are not persuasive. Applicant's arguments, that: a) the Degner et al. reference does not teach, show or suggest the processing chamber as recited in independent claims 29 and 41 and claims dependent thereon, and that b) the Lei et al. reference does not teach, show or suggest the processing chamber as recited in independent claim 1 and claims dependent thereon, do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited. Further, they do not show how the amendments avoid such references. Degner et al. and Lei et al. disclose the limitations of independent claims 1, 29 and 41 and claims dependent thereon, as stated above, and therefore the rejections of such claims over the reference stands.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of


Art Unit: 1763


the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luz L. Alejandro whose telephone number is 703-305-4545. The examiner can normally be reached on 5/4/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3599 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


LLAM
May 6, 2002


GREGORY MILLS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700